

Attorney's Docket No.: 05542-459003 / 5353C1/CMP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Wallace Tang Art Unit : 1763
Serial No. : 09/134,147 Examiner : Trung Dang
Filed : August 14, 1998
Title : IN-SITU REAL-TIME MONITORING TECHNIQUE AND APPARATUS FOR
DETECTION OF THIN FILMS DURING CHEMICAL/MECHANICAL
POLISHING PLANARIZATION

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows:

In the claims:

Cancel claims 1-10 and 20-31 without prejudice.

11. (Amended) A chemical mechanical polisher for planarizing a film on one side of a substrate having two sides comprising at least one light source that transmits light toward the substrate from the side of the substrate with the film to illuminate at least one section on the film and create at least one reflected light signal that is received by at least one device that monitors a dimensional change based on the reflected light signal.

12. The polisher as claimed in claim 11 wherein the at least one device is positioned on the same side of the substrate as the light source.

13. The polisher as claimed in claim 11 wherein each monitored section is minimized in size to remove signal problems.

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14. The polisher as claimed in claim 11, wherein only one section is illuminated which is a dedicated measurement area.

15. The polisher as claimed in claim 11, wherein more than one section is illuminated.

16. (Amended) A chemical mechanical polisher for planarizing a film on one side of a substrate having two sides comprising at least one light source that transmits light toward the substrate from the side of the substrate with the film to illuminate at least one section on the film and create at least one reflected light signal that is received by at least one means for monitoring thickness change based on the reflected light signal.

17. The polisher as claimed in claim 16 wherein the at least one means for monitoring thickness change based on the reflected light signal comprises a photodetector connected to an interferometer or spectrophotometer.

18. The polisher as claimed in claim 16 wherein each monitored section is minimized in size to remove signal problems.

19. The polisher as claimed in claim 16, wherein only one section is illuminated which is a dedicated measurement area.

REMARKS

Claims 1-10 have been canceled without prejudice so that the remaining claims are directed a chemical mechanical polishing system in which light is transmitted from the side of the substrate with the film.

In the Preliminary Remarks filed with this application, the Applicant had requested that an interference be declared between the present claims and the claims of Lustig '651. After further review, Applicant believes that the present claims 11-19 are patentably distinct from the claims of Lustig '651. For example, the claims of Lustig recite a "window traversing a viewing